WHAT IS CLAIMED IS:

1. A semiconductor device, comprising:

a circuit having at least one thin film transistor formed on an insulating substrate;

wherein an active layer of said thin film transistor is constituted by using a region where crystal grows in parallel to a substrate from a metal element added region to which metal elements that promote crystallization of silicon having a longitudinal shape are added;

wherein a longitudinal direction of the metal element added region is identical or substantially identical with a direction of moving carriers in the active layer; and

wherein the metal element added region extends longer over an end portion of the active layer.

2. A semiconductor device according to claim 1, wherein a distance by which the metal element added region extends longer from an end portion of the active layer is set to 50% or more of the crystal growth distance.

3. A semiconductor device according to claim 1, wherein the active layer is disposed within a region where the metal elements are linearly diffused from the metal element added region during a crystallizing process.

4. A semiconductor device according to claim 1, wherein a direction of moving carriers in an island region of semiconductor which constitutes a thin film transistor is substantially identical with a direction of the continuity of a crystal structure.

5. A semiconductor device according to claim 1, wherein the metal elements consist of one or plural kinds of elements selected from Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au.

Sub. A'

6. A method of manufacturing a semiconductor device, comprising the steps of:

forming an amorphous silicon film on a substrate having an insulating surface;

forming a metal element added region where metal elements that promote the crystallization of silicon which is longitudinally shaped is added on said amorphous silicon film; and

conducting a heat treatment to allow crystal to grow in parallel to said substrate from said metal element added region;

wherein said metal element added region extends longitudinally over an end portion of a semiconductor active layer pattern which will be formed in a post-process by a predetermined distance.

Sub. A' Cont.

7. A method of manufacturing a semiconductor device according to claim 6, wherein a distance by which the metal element added region extends longer from an end portion of the active layer is set to 50% or more of the crystal growth distance.

8. A method of manufacturing a semiconductor device according to claim 6, wherein the metal elements consist of one or plural kinds of elements selected from Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au.

9. A method of manufacturing a semiconductor device, comprising the steps of:

forming an amorphous silicon film on a substrate having an insulating surface;

selectively introducing metal elements that promote the crystallization of silicon into a plurality of regions of said amorphous silicon film; and

conducting a heat treatment to allow crystal to grow in parallel to said substrate from said plurality of regions into which the metal elements have been selectively introduced;

wherein at least one of said regions into which the metal elements have been selectively introduced is not used for formation of an element but provided for controlling crystal growth states of other regions into which the metal elements have been selectively introduced.

10. A method of manufacturing a semiconductor device according to claim 9, wherein the metal elements that promote the crystallization of silicon consist of one or plural kinds of elements selected from Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au.

11. A method of manufacturing a semiconductor device according to claim 9, wherein the introduction of the metal elements is conducted by an ion implanting method.

Sub. A1 cont'd.

12. A method of manufacturing a semiconductor device according to claim 9, wherein the introduction of the metal elements is conducted by coating a solvent in which metal elements are dissolved or dispersed.

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13. A semiconductor device disposed on a substrate having an insulating surface, said semiconductor device comprising:

an active layer formed of a crystalline silicon film where crystal grows in parallel to or substantially in parallel to the substrate from one of a plurality of regions to which metal elements that promote the crystallization of silicon are added;

wherein a crystal growth region where crystal grows from another one of said plurality of regions is not used as an active layer of the semiconductor device.

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